Computer Systems Security / Computer Systems Security Lab

Syllabus

Spring 2016

Description

CS166  This course teaches principles of computer security from an applied viewpoint and provides hands-on experience with security threats and countermeasures. The course additionally covers principles and skills useful for making informed security decisions and for understanding how security interacts with the world around it. Applied topics include cryptography, authorization control, operating systems security, and web and network security. Other topics include general security principles, human factors such as trust and social engineering, the security of complex systems, and the economics of security. The course aims to balance theory and practice. There are weekly homeworks and four hands-on projects. Homeworks will ask you to think critically about security questions. Projects will ask you to get down into the mud and do some making and breaking.

CS162  This course is a half-credit lab intended to be taken concurrently with CS166 and provides students with a deeper understanding of the material by doing advanced versions of the CS166's projects. These advanced versions focus on real-world skills: performing attacks that are more difficult and rely on less serious vulnerabilities, performing attacks against systems with more real-world constraints, and creating attacks that achieve a higher standard of quality than a mere “proof of concept.” Additionally, students will be asked to give a presentation during a CS162 meeting on an advanced topic of their choice that they have researched.

Time and Place

CS166  MWF 1:00–1:50 pm  CIT 368
CS162  W 4:30–6:00 pm  CIT 506

Course Credit

<table>
<thead>
<tr>
<th>CS166</th>
<th>CS162</th>
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<tbody>
<tr>
<td>Homeworks</td>
<td>40%</td>
</tr>
<tr>
<td>Project 1</td>
<td>10%</td>
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<tr>
<td>Project 2</td>
<td>10%</td>
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<tr>
<td>Project 3</td>
<td>10%</td>
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<tr>
<td>Final Project</td>
<td>30%</td>
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<tr>
<td>In-Class Presentation</td>
<td>10%</td>
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We will omit your lowest homework grade when calculating the homework portion of your grade for the course; the remaining homeworks will be weighted equally.

Prerequisites

In order to take CS166, you have must have previously completed (1) CS016, CS018, or CS019, and (2) CS033. Students who have previously taken CS1951-E should not enroll in CS166 given the significant
overlap between the two courses. Instructor permission is required for CS162.

Topics


Staff

Bernardo Palazzi (Professor) bernardo CIT 327
Roberto Tamassia (Professor) rt CIT 413
Joshua Liebow-Feeser (Head TA) jliebowf
Evgenios Kornaropoulos (Grad TA) evgenios
Giselle Lillie (Grad TA) glillie
Daniel Haugh dhaugh
Jeremy Tong jwton
Justin Bisignano jtbsign
Justin Brower jbrowser
Natalie Roe nroe
Zachary Zagorski zzagorsk

Late Policy

Homeworks Late homeworks will not be accepted.

Projects Each student begins the semester with six late days to use on projects. Turning in a project late (including intermediate deadlines) will use up the appropriate number of late days. Any further late days will reduce your grade by 25% additively (that is, one day late will be a 25% penalty, two days late will be a 50% penalty, and so on). We will distribute your late days optimally at the end of the semester. Note: There may be some intermediate deadlines (if a project has multiple components) for which you will not be allowed to use late days; these deadlines will be clearly marked.

Extenuating Circumstances If there are extenuating circumstances preventing you from completing an assignment on time (e.g., illness), please contact the instructors before the assignment is due.

Capstone and 2000-Level Credit

Capstone CS166 can be used as a capstone course. Students wishing to take CS166 for capstone credit must take CS162, and should register for both CS166 and CS162 in Banner. If you are planning on using CS166 as your capstone course, please email the Head TA list.

2000-Level Credit CS166 and CS162 can be taken together by master’s students for 2000-level credit. Students wishing to do this should only register for CS166 (not CS162) in Banner, and should email the Head TA list.